Proxim WIRELESS NETWORKS
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6/17/2004

Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, SW
Washington, DC 20554

Re: WT Docket 00-32

Dear Ms. Dortch,

Proxim Corporation hereby submits its views in the above referenced proceeding. Proxim is commenting specifically with reference to the ongoing debate regarding the appropriate emissions mask to use for the 4.9 GHz Public Safety band, which is the topic of an outstanding petition for reconsideration filed by the National Public Safety Telecommunications Council [NPSTC].[1]

On the basis of two recent *ex parte* filings by NPSTC and Motorola, it appears that the divergence of views regarding the appropriate 4.9 GHz emission mask may be resolved quickly by the Commission in a manner that both meets the NPSTC desire for rules that will enable the leveraging of commercial off the shelf technologies and Motorola's desire for rules that will offer reliable adjacent channel interference protection. On the basis of Proxim's research, both objectives can be met by adopting the use of the DSRC masks with the threshold for a tighter mask set at 0 dBm, rather than at 20 dBm. Failure of the Commission to move immediately to resolve this issue will delay the introduction of long-needed broadband public safety wireless systems.

[1] Petition for Reconsideration of the National Public Safety Telecommunications Council, submitted July 30, 2003, ¶3. [Hereinafter "NPTSC Petition"]

Background

The recent *ex-parte* presentations by Motorola[2], and by NPSTC[3] demonstrate that both appear to agree that a loosening of the 4.9 GHz emission mask currently specified in §90.210 of the Commission's rules is justified. NPSTC writes that they are seeking three outcomes:

1. Equipment that is mostly consistent with larger markets,
2. The use of the DSRC-A mask for power levels of 20 dBm or lower, and
3. The use of the DSRC-C mask for power levels greater than 20 dBm.[4]

Motorola states that, while they too propose to leverage the DSRC masks, they believe that the threshold for a tighter mask should occur at 0 dBm, rather than at 20 dBm.[5]

As is clearly expressed in the NPSTC *ex-parte*, a major objective of NPSTC is that the equipment created for use in the 4.9 GHz band be able to leverage the large equipment volumes being generated in the commercial market. This will allow public safety entities to purchase this equipment from multiple suppliers at competitive prices. Motorola, while agreeing with this sentiment, believes that the emission mask should also be used to minimize adjacent channel interference in the 4.9 GHz band, while NPSTC believes that 4.9 GHz interference and sharing can be managed "through a combination of technology and incident command structures."[6]

Proxim is one of the world's largest vendors of systems based on the 802.11 standards and is actively developing products for the 4.9 GHz public safety market. Proxim relies on third-party chipset manufacturers for its products and, therefore, has an interest similar

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[2] Letter to the Commission from Steve B. Sharkey, December 17, 2003 and the accompanying presentation entitled "4.9 GHz; FCC December 16, 2003". [Hereinafter "Motorola ex-parte"]
[3] Letter to the Commission from Marilyn B. Ward, February 13, 2004 and the accompanying presentation entitled "Docket 00-32 Ex Parte Discussion Monday February 9, 200 [sic] FCC, Washington DC; TOPIC: Mask and OOBE Specification". [Hereinafter "NPSTC ex-parte"]
[4] NPSTC ex-parte, slide #4.

[5] Motorola ex-parte, slide #4.
[6] NPSTC ex-parte, slide #5.

to that of the public safety community to leverage commercial off-the-shelf [COTS] devices for use in our products. We agree with NPTSC, therefore, that a goal of the Commission's rules should be the ability to leverage COTS equipment. On the other hand, as we stated in our Comments to the NPSTC Petition[7], we recognize the need for those rules to also address the issue of maximizing the use of the 4.9 GHz spectrum for public safety operations, protecting it from interference, and addressing, up front, some of the problems that have plagued public safety operation in other bands. Sharing both the objectives of leveraging COTS components and the importance of interference protection, we believe that Proxim can help the Commission resolve the issue presented in NPSTC's outstanding Petition for Reconsideration. The issue must be resolved quickly, since the present impasse is adversely affecting Proxim's and other manufacturers' ability to proceed with product development and is delaying deployment of long-overdue broadband wireless systems by the public safety community.

Discussion

In its ex-parte, Motorola made the following comments[8]:

- Motorola issued RFP to seven COTS 802.11a chipset vendors for compatibility with 4.9GHz rules
- Responses indicated that 4 out of 7 vendors could support tightened mask with existing chipsets
  - Software only changes in some cases
  - Software changes and external filters added in other cases

Because Proxim is actively developing 4.9 GHz products for the public safety market, we are in a position to validate the technical elements of these comments. We have found that it is possible to meet *any* of the proposed masks (§90.210, DSRC-C, DSRC-A, or, of course, the 802.11a mask) using COTS chipsets. The complexity, as Motorola describes, comes in adapting the output of those chipsets to meet the mask. In our own implementation, the results are the following.

[7] "Comments of Proxim to the Petition For Reconsideration of the National Public Safety Telecommunications Council", October 2, 2003.
[8] Motorola ex-parte, slide #16.

- The §90.210 mask is, of course, the most difficult mask to meet. In this case, external filters have not proved to be sufficient. Meeting the requirements of this mask at reasonable output power would require not only filters, but also changes to some of the data modulation parameters. Those parameters are adjustable via software changes and, so, *it is not necessary to create a new chipset to address the public safety market*. There would, however, be a change to the data rate achievable in this scenario because the modulation itself would change. We consider this a significant drawback to this scenario. Since the rationale behind this spectrum allocation is to enable high speed data communications for public safety users, any restriction that limits the speed at which the data can be transmitted should be avoided.

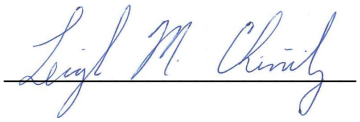
- For either of the DSRC masks (DSRC-C or DSRC-A), external filtering is all that is required to permit COTS chipsets to be used for the public safety application. The cost of these filters would add, approximately, between 5% and 15% to the material cost of the radios for these devices, depending on the specific device under consideration.

All of the parties involved in this discussion want what is best for the public safety community. There are, however, two competing concerns that need to be balanced – the desire of that community to leverage equipment from the commercial arena, and the simultaneous desire of that community to have robust, high-quality communications. While Proxim appreciates that the Commission must weigh all of the input, there is also a cost to regulatory delay. In this case, the delay in resolving this question is having a direct, adverse impact on Proxim's, and, we assume, other manufacturers' ability to proceed with product development for this band.

Recommendation

Proxim, therefore, respectfully suggests that the Commission now has sufficient information to resolve this issue. Both the NPSTC desire for rules that will enable the leveraging of COTS devices and Motorola's desire for rules that will offer adjacent channel interference problems can be met by adopting the use of the DSRC masks. Since the Motorola proposal for a threshold of 0 dBm offers more adjacent channel protection in the band and does not inhibit the use of COTS devices, Proxim also suggests that the FCC adopt this recommendation. Most importantly, however, Proxim requests that the Commission decide this issue without further delay.

Respectfully Submitted



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